

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT EXAMINING OPERATIONS
PATENT APPLICATION

Applicant : Reed Gleason, et al. Group Art Unit:
Serial No.: Examiner:
Filed: Concurrently herewith
Title: MEMBRANE PROBING SYSTEM

PRELIMINARY AMENDMENT

March 22, 2001

1600 ODS Tower
601 SW Second Avenue
Portland, Oregon 97204

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Prior to examination, please amend the specification as follows:

In the Claims:

Please cancel claim 1.

Please add the following claims:

2. A probing assembly for probing an electrical device comprising:
 - (a) a support;
 - (b) a membrane in overlying relationship to said support;
 - (c) a plurality of conductors supported by said membrane;

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- (d) a plurality of contacts supported by said membrane, each of said contacts electrically connected to at least a respective one of said conductors, each of said contacts tilts in response to pressing engagement with said electrical device, and each of said contacts having at least one substantially flat surface inclined relative to said membrane, defining an acute angle relative thereto.

3. The probing assembly of claim 2 wherein said contact has a tail and a contacting portion, and said inclined surface is between said tail and said contacting portion.

4. The probing assembly of claim 2 wherein said inclined surface is a side of said contact.

5. The probing assembly of claim 2 wherein said contact is integral.

6. The probing assembly of claim 2 wherein said contact is substantially pyramidal.

7. The probing assembly of claim 2 wherein said contact defines a footprint having a wide end and a narrow end.

8. The probing assembly of claim 2 wherein each of said contacts has a respective contacting portion, and said contacting portions are aligned in linear arrangement.

9. The probing assembly of claim 7 wherein each of said contacts has a respective contacting portion, said contacting portions are aligned in linear arrangement, and said contacts

are arranged so that a wide end of one of said contacts is adjacent to a narrow end of another of said contacts.

10. A probing assembly for probing an electrical device comprising:
 - (a) a support;
 - (b) a membrane in overlying relationship to said support;
 - (c) a conductor supported by said membrane;
 - (d) a contact supported by said membrane and electrically connected to said conductor, said contact tilts in response to pressing engagement with said electrical device, said contact having an elongate portion and a contacting portion in elevational relationship to said elongate portion, and said contacting portion and said elongate portion being integral with each other.
11. The probing assembly of claim 10 wherein said elongate portion has a tail, and an inclined surface extends along said elongate portion and away from said tail.
12. The probing assembly of claim 10 wherein said elongate portion has an inclined side, relative to said membrane, defining an acute angle therebetween.
13. The probing assembly of claim 10 wherein said contact is substantially pyramidal.
14. The probing assembly of claim 10 wherein said contact has a footprint having a wide end and a narrow end.

15. A probing assembly for probing an electrical device comprising:
- (a) a support;
 - (b) a membrane in overlying relationship to said support;
 - (c) a conductor supported by said membrane;
 - (d) a contact supported by said membrane and electrically connected to said conductor, said contact having a downwardly projecting elongate ridge having a pair of sides defining an acute angle therebetween said ridge suitable for cutting through an oxide layer on said electrical device.

16. The probing assembly of claim 15 wherein said pair of sides join to form said ridge.

17. The probing assembly of claim 15 wherein said ridge extends substantially across said contact.

18. The probing assembly of claim 15 wherein said contact further includes a flat surface supporting said ridge.

19. The probing assembly of claim 15 further including a plurality of downwardly projecting elongate ridges.

20. The probing assembly of claim 19 wherein said plurality of ridges form a waffle pattern.

21. The probing assembly of claim 15 wherein said contact defines an arch, and said ridge is located at an end of said arch.

22. The probing assembly of claim 21 wherein said contact has another elongate ridge at the other end of said arch.

23. The probing assembly of claim 22 wherein said first material is conductive rhodium.

24. The probing assembly of claim 23 wherein said second material is conductive nickel.

25. The probing assembly of claim 22 wherein each of said contacts tilts in response to pressing engagement with said electrical device.

26. A probing assembly for probing an electrical device comprising:

- (a) a support;
- (b) a membrane in overlying relationship to said support;
- (c) a plurality of elongate conductors supported by said membrane;
- (d) a plurality of contacts supported by said membrane, each of said contacts electrically connected to at least a respective one of said conductors; and
- (e) a plurality of said contacts further comprised of:
 - (i) a first material located at the contacting portion of said contacts where the depth of said first material in a direction perpendicular to

said membrane is greater than the depth of said first material in a direction perpendicular to the side of said first material;

- (ii) a second material supporting said first material, wherein said first material is different than said second material.

27. The probing assembly of claim 26 wherein said first material is conductive rhodium.

28. The probing assembly of claim 27 wherein said second material is conductive nickel.

29. The probing assembly of claim 26 wherein each of said contacts tilts in response to pressing engagement with said electrical device.

30. A probing assembly for probing an electrical device comprising:

- (a) a support;
- (b) a membrane in overlying relationship to said support;
- (c) a plurality of elongate conductors supported by said membrane;
- (d) a plurality of elongate contacts supported by said membrane, each of said elongate contacts electrically connected to at least a respective one of said conductors, each of said elongate contacts tilts in response to pressing engagement with said electrical device; and
- (e) said elongate contacts further characterized by:
 - (i) a contacting portion located to come into pressing engagement with said electrical device;

- (ii) a major portion of a body extending from said contacting portion that increasingly decreases in thickness further distant from said contacting portion.

31. The probing assembly of claim 30 wherein said major portion increasingly decreases linearly.

32. The probing assembly of claim 30 wherein said contacting portion and said body are integral with each other.

33. The probing assembly of claim 32 wherein said contacting portion and said body are homogenous with each other.

34. The probing assembly of claim 30 wherein said elongate contact is substantially pyramidal.

35. The probing assembly of claim 30 wherein said contacting portion is substantially parallel with respect to said membrane and said major portion is inclined with respect to said membrane.

36. A probing assembly for probing an electrical device comprising:

- (a) a support;
- (b) a membrane in overlying relationship to said support;
- (c) a plurality of elongate conductors supported by said membrane;

- (d) a plurality of contacts supported by said membrane, each of said contacts electrically connected to at least a respective one of said conductors; and
- (e) said contacts further characterized by a contacting portion located to come into pressing engagement with said electrical device where the contacting portion of each of said contacts has a substantially identical non-smooth texture.

37. The probing assembly of claim 36 wherein each of said elongate contacts tilts in response to pressing engagement with said electrical device.

38. The probing assembly of claim 36 wherein said contacting portion is substantially parallel with respect to said membrane.

39. A probing assembly for probing an electrical device comprising:

- (a) a support;
- (b) a membrane in overlying relationship to said support;
- (c) a plurality of elongate conductors supported by said membrane;
- (d) a plurality of elongate contacts supported by said membrane, each of said elongate contacts electrically connected to at least a respective one of said conductors, and
- (e) said elongate contacts further characterized by having a first width proximate a contacting portion with said electrical device that is less than a second width proximate an opposing end of said elongate contact with respect to said contacting portion.

40. The assembly of claim 39 wherein each of said elongate contacts tilts in response to pressing engagement with said electrical device.

41. The assembly of claim 39 wherein each of said contacting portions are aligned in a linear arrangement, and said contacts are arranged so that said opposing end of one of said contacts is adjacent to a non-opposing end of another said contacts.

42. The assembly of claim 41 wherein each of said contacting portions are generally aligned in an arrangement along an axis, and said opposing end of one of said contacts is in an overlapping relationship to said opposing end of an adjacent one of said contacts with respect to direction perpendicular to said axis.

REMARKS

Examination and allowance are respectfully requested.

Respectfully submitted,



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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Box Fee Amendment, Commissioner for Patents, Washington, D.C. 20231.

Dated: March 22, 2001


Kevin L. Russell

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